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ConocoPhillips

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Bartlesville, OK 74004

8EHQ-1104-15813

November 5, 2004

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Office of Pollution Prevention and Toxics
Environmental Protection Agency
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Attn: TSCA Section 8(e) Coordinator

ConocoPhillips Company ("ConocoPhillips") is writing to report the presence of low concentrations of coke particles having physical characteristics meeting the National Institute of Occupational Safety and Health (NIOSH) 7400 B criteria for "respirable fibers" in our calcined petroleum coke products. A ConocoPhillips occupational exposure assessment determined that, based on the physical characteristics of the fibers and the low concentrations observed through air sampling, their presence does not suggest a risk to ConocoPhillips' workers.

Calcining is a process in which green coke is converted to a dense, carbonaceous product used in the production of anodes, electrodes and other products. The green coke is heated at temperatures of 1000 to 1400 degrees C to remove moisture, drive off volatile matter, and increase the density of the coke structure. It is believed that the fibers, which were found in both bulk samples and in workplace air samples, are appropriately described by CASRN 64743-05-1, calcined coke. ConocoPhillips did not find coke fibers in green coke operations.

The respirable coke fibers (i.e. those with length $\geq$ 5 um, diameter $\leq$ 3 um, and aspect ratio > 5:1) found in ConocoPhillips' workplace air samples had median and mean diameters of 1.3 and 1.32 um, respectively. Median and mean lengths were 9.0 and 10.6 um, respectively. Approximately 94% of the respirable fibers were less than 20 um long, which is one of several length thresholds proposed to define potentially active fibers.

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Exposure monitoring was conducted at ConocoPhillips' calcining plants. Although consistently low, 8-hour TWA (time weighted average) concentrations varied with plant site and task. A total of 206 personal monitoring TWAs were calculated, none of which exceeded 0.300 f/ml. Approximately 98% of all TWAs calculated were less than 0.1 f/ml. Activities associated with the four TWAs that exceeded 0.1 f/ml involved sweeping, cleaning, loading or grinding petroleum coke. Workers conducting these activities

generally wear respiratory protective equipment because the work environment is relatively dusty.

Presented below are the six highest exposure concentrations found in the workplace study. The findings were consistent at all locations.

Rank	Plant	Job	Activities	TWA (f/ml)
1	C	Operator at calcining facility	Loaded trucks with CPC[1] from an isolated booth using remotely operated equipment. (dumped vac truck of fines)	0.3000
2	A	Port operator	Swept and cleaned dock silo	0.2020
3	C	Operator at calcining facility	Worker was inside a calciner removing (chipping out) brick from the refractory lining of a kiln during turn around operation. Worker then loaded trucks with CPC.	0.1700
4	B	Lab technician	Made quality control tests on calcined or green product. Activity involves grinding both GPC[2] and CPC.	0.1107
5	A	Port operator	Swept and cleaned dock silo.	0.0958
6	B	Maintenance	Worker performed maintenance on a piece of equipment in the calcined coke storage building.	0.0838

Exposure limits have not been established for coke fibers. However, exposure guidelines offered in the scientific literature and in carbon fiber manufacturers' MSDSs range from 1 to 5 f/ml TWA. ConocoPhillips believes these guidelines are the best available benchmarks for workplace exposure levels of carbon fibers.

ConocoPhillips has no data or results from toxicological testing for coke fiber effects, and is not aware of any reported serious adverse effects from exposure to coke fibers. No published study indicates that exposure to carbon fibers (which might be similar to coke fibers) results in excess lung cancer or mesothelioma, and no regulatory or major advisory agency has concluded otherwise.

While coke fibers may be present at industrial locations other than our own, ConocoPhillips has no information upon which to base a conclusion that the characteristics and concentrations of such fibers at other locations differ (from those we observed) in ways that present a substantial risk of injury to health or the environment. We do not believe the information described here meets the reporting requirements of Section 8(e) of the Toxic Substances Control Act. However, to ensure transparency

[1] CPC – Calcined Petroleum Coke
[2] GPC – Green Petroleum Coke

ConocoPhillips is voluntarily submitting this information in a manner that is consistent with that section.

If you have further questions about the information, please contact me at (918) 661-3865.

Sincerely,

Jennifer Galvin, Ph.D.
Manager of Industrial Hygiene and Toxicology
918-661-3865

cc: C. R. Clark, TSCA Compliance Officer